SEQUENCE LISTING

	(1) GE	NERAL INFORMATION:
5 1 L	(i) 7	APPLICANT: Eaton, Dan L. de Sauvage, Frederic J.
Mg, /	(ii)	TITLE OF INVENTION: MPL LIGAND
°10	(iii)	NUMBER OF SEQUENCES: 20
15	(iv)	CORRESPONDENCE ADDRESS: (A) ADDRESSEE: Genentech, Inc. (B) STREET: 460 Point San Bruno Blvd (C) CITY: South San Francisco (D) STATE: California (E) COUNTRY: USA (F) ZIP: 94080
20	(v)	COMPUTER READABLE FORM: (A) MEDIUM TYPE: 5.25 inch, 360 Kb floppy disk (B) COMPUTER: IBM PC compatible (C) OPERATING SYSTEM: PC-DOS/MS-DOS (D) SOFTWARE: patin (Genentech)
25	(vi)	CURRENT APPLICATION DATA: (A) APPLICATION NUMBER: 08/348658 (B) FILING DATE: 02-DEC-1994 (C) CLASSIFICATION:
J 30	(vii)	PRIOR APPLICATION DATA: (A) APPLICATION NUMBER: 08/185607 (B) FILING DATE: 21-JAN-1994
35	(vii)	PRIOR APPLICATION DATA: (A) APPLICATION NUMBER: 08/176553 (B) FILING DATE: 03-JAN-1994
40	(viii)	ATTORNEY/AGENT INFORMATION: (A) NAME: Winter, Daryl B. (B) REGISTRATION NUMBER: \$2,637 (C) REFERENCE/DOCKET NUMBER: 871P1C1
45	(ix)	TELECOMMUNICATION INFORMATION: (A) TELEPHONE: 415/225-1249 (B) TELEFAX: 415/952-9881 (C) TELEX: 910/371-7168
50	(2) IN	FORMATION FOR SEQ ID NO:1:
	(i)	SEQUENCE CHARACTERISTICS: (A) LENGTH: 20 amino acids

	(D) TOPOLOGY: linea					
c	(xi) SEQUENCE DESCRIPTIO	N: SEQ	ID NO:1:	:		
5	Ser Pro Ala Pro Pro Ala C	Cys Asp	Pro Arg 10	Leu Leu	Asn I	ys Leu 15
10	Leu Arg Asp Asp His					
	(2) INFORMATION FOR SEQ ID	NO:2:		•		
15	(i) SEQUENCE CHARACTERI (A) LENGTH: 26 amin (B) TYPE:\amino aci (D) TOPOLOGY: linea	no acids .d	3			
	(xi) SEQUENCE DESCRIPTIO	N: SEQ	ID NO:2	:		
, 0	Ser Pro Ala Pro Pro Ala C	ys Asp	Leu Arg 10	Val Leu	Ser I	ys Leu 15
25	Leu Arg Asp Ser His Val L	eu His	Ser Arg 25	Leu 26		
	(2) INFORMATION FOR SEQ ID	NO:3:				
30	(i) SEQUENCE CHARACTERI (A) LENGTH: 42 amin (B) TYPE: amino aci (D) TOPOLOGY: linea	no acids .d	}			
ば` 35	(xi) SEQUENCE DESCRIPTION	N: SEQ	ID NO:3	:		
,,	Leu Leu Leu Val Val Met L 1 5	Leu Leu	Leu Thr 10	Ala Arg	Leu T	hr Leu 15
1 0	Ser Ser Pro Ala Pro Pro A 20	la\Cys	Asp Leu 25	Arg Val	Leu S	Ser Lys 30
	Leu Leu Arg Asp Ser His V 35	al Deu	His Ser 40	Arg Leu 42		
15	(2) INFORMATION FOR SEQ ID	NO:4				
50	(i) SEQUENCE CHARACTERI (A) LENGTH: 390 bas (B) TYPE: nucleic a (C) STRANDEDNESS: s	ses cid				

(xi)\ SEQUENCE DESCRIPTION: SEQ ID NO:4:

GAATTCCTGG AATACCAGCT GACAATGATT TCCTCCTCAT CTTTCAACCT 50

CACCTCTCCT CATCTAAGAA TTGCTCCTCG TGGTCATGCT TCTCCTAACT 100

GCAAGGCTAA CCCTGTCCAG CCCGGCTCCT CCTGCTTGTG ACCTCCGAGT 150

CCTCAGTAAA CTGCTTCGTG ACTCCCATGT CCTTCACAGC AGACTGGTGA 200

GAACTCCCAA CATTATCCCC TTTATCCGCG TAACTGGTAA GACACCCATA 250

CTCCCCAGGAA GACACCATCA CTTCCTCTAA CTCCTTGACC CAATGACTAT 300

TCTTCCCATA TTGTCCCCAC CTACTGATCA CACTCTTGA CAAGAATTAT 350

TCTTCACAAT ACAGCCCGCA TTTAAAAGCT CTCGTCTAGA 390

(2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 390 bases
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (xi) SEOUENCE DESCRIPTION: SEO ID NO:5:

CTTAAGGACC TTATGGTCGA CTGTTACTAA AGGAGGAGTA GAAAGTTGGA 50
GTGGAGAGGA GTAGATTCTT AACGAGGAGC ACCAGTACGA AGAGGATTGA 100
CGTTCCGATT GCGACAGGTC GGGCCGAGGA GGACGACAC TGGAGGCTCA 150
GGAGTCATTT GACGAAGCAC TGAGGGTACA GGAAGTGTCG TCTGACCACT 200
CTTGAGGGTT GTAATAGGGG AAATAGGCGC ATTGACCATT CTGTGGGTAT 250

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	GAGGGTCCTT CTGTGGTAGT GAAGGAGATT GAGGAACTGG GTTACTGATA 300
5	AGAAGGTAT AACAGGGGTG GATGACTAGT GTGAGAGACT GTTCTTAATA 350
10	AGAAGTGTTA TGTCGGGCGT AAATTTTCGA GAGCAGATCT 390
	(2) INFORMATION FOR SEQ ID NO:6:
15	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 25 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
20	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:
lub.	Ser Pro Ala Pro Pro Ala Cys Asp Pro Arg Leu Leu Asn Lys Leu 1 10 15
Cardinal Cardina Cardinal Cardinal Cardinal Cardinal Cardinal Cardinal Cardina Cardinal Cardina Cardinal Cardinal Cardina C	Leu Arg Asp Asp His Val Leu His Gly Arg
ı	(2) INFORMATION FOR SEQ ID NO:7:
30	(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 27 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear
Uzzy -	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:
33	Ser Pro Ala Pro Pro Ala Cys Asp Pro Arg Leu Leu Asn Lys Leu 1 5 10 15
40	Leu Arg Asp Asp His Ser Val Leu His Gly Arg Leu 20 25 27
	(2) INFORMATION FOR SEQ ID NO:8
45	(i) SEQUENCE CHARACTERISTICS:\ (A) LENGTH: 25 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear
50	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:
30	Ser Pro Ala Pro Pro Ala Xaa Asp Pro Arg Leu Leu Asn Lys Leu 1 5 15

	Leu Arg Asp Asp His Val Leu His Gly Arg 20 25
-	(2) INFORMATION FOR SEQ ID NO:9:
5	(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 14 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear
10	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:
15	Xaa Pro Ala Pro Pro Ala Xaa Asp Pro Arg Leu Xaa Asn Lys 1 5 10 14
	(2) INFORMATION FOR SEQ ID NO:10:
20	(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 20 bases (B) TYPE nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear
25)	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:
	CCNGCNCCNC CNGCNTGYGA 20
30 1	(2) INFORMATION FOR SEQ ID NO:11:
1 35	(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 21 bases (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear
40	(xi) SEQUENCE DESCRIPTION SEQ ID NO:11:
	NCCRTGNARN ACRTGRTCRT C 21
45	(2) INFORMATION FOR SEQ ID NO:12:
50	 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 69 bases (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12: CCAGCGCGCG CAGCCTGTGA CCCCCGACTC CTAAATAAAC TGCCTCGTGA 50 5 TGACCACGTT CAGCACGGC 69 10 (2) INFORMATION FOR SEQ ID NO:13: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 69 bases 15 (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear (xi) SEQUENCE DESCRIPTION: SEQ ID NO:13: GGTCGCGGCG GTCGGACACT GGGGGCTGAG GATTTATTTG ACGGAGCACT 50 ACTGGTGCAA GTCGTGCG 69 (2) INFORMATION FOR \$EQ ID NO:14: 30 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 69 bases (B) TYPE: nucle‡c acid (C) STRANDEDNESS: single 35 (D) TOPOLOGY: linear (xi) SEQUENCE DESCRIPTION: SEQ ID NO:14: CCAGCACCTC CGGCATGTGA CCCCCGACTC CTAAATAAAC TGCTTCGTGA 50 40 CGACCACGTC CATCACGGC 69 45 (2) INFORMATION FOR SEQ ID NO:15: (i) SEQUENCE CHARACTERISTICS: 50 (A) LENGTH: 69 bases (B) TYPE: nucleic acid (C) STRANDEDNESS: single

(N) TOPOLOGY: linear (xi) SEQUENCE DESCRIPTION: SEQ ID NO:15: 5 GGTCGTGGAG\GCCGTACACT GGGGGCTGAG GATTTATTTG ACGAAGCACT 50 GCTGGTGCAG GTAGTGCCG 69 10 (2) INFORMATION\ FOR SEQ ID NO:16: (i) SEQUENCE CHARACTERISTICS: 15 (A) LENGTH: 9 amino acids (B) TYPE: \amino acid (D) TOPOLOGY: linear 20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:16: Pro Arg Leu Leu Ash Lys Leu Leu Arg 1 (2) INFORMATION FOR SEQ ID NO:17: (i) SEQUENCE CHARA TERISTICS: (A) LENGTH: 69 bases (B) TYPE: nucletc acid (C) STRANDEDNESS: single (D) TOPOLOGY: lihear (xi) SEQUENCE DESCRIPTION: SEQ ID NO:17: CCAGCACCGC CGGCATGTGA CCCCCGACTC CTAAATAAAC TGCTTCGTGA 50 CGATCATGTC TATCACGGT 69 (2) INFORMATION FOR SEQ ID NO:18: 45 (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 69 bases (B) TYPE: nucleic acid (C) STRANDEDNESS: single (D) TOPOLOGY: linear 50 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

GGTCGTGCCG GCCGTACACT GGGGGCTGAG GATTTATTTG ACGAAGCACT 50

GCTAGTACAG ATAGTGCCA 69

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 53 bases
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

CCAGCACCGC CGGCATCTGA CCCCCGACTC CTAAATAAAC TGCTTCGTGA 50

- (2) INFORMATION FOR SEQ ID NO:20:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 45 balses
 - (B) TYPE: nucleic \acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (xi) SEQUENCE DESCRIPTION SEQ ID NO:20:

GCCGTGAAGG ACGTGGTCGT CACGAAGCAG TTTATTTAGG AGTCG 45